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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,345	01/14/2004	Sudhir Agrawal	HYB-018US1	3490

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EXAMINER	
HILL, KEVIN KAI	

ART UNIT	PAPER NUMBER
1633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/757,345	AGRAWAL ET AL.	
	Examiner	Art Unit	
	KEVIN K. HILL	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5,10-16,18,31,32,40,42,95,99 and 147* is/are pending in the application.

4a) Of the above claim(s) *3,5,10-16,18,32,40,42,95,99 and 147* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :November 5, 2007, January 11, 2008.

Detailed Action

Election/Restrictions

Applicant has elected the invention of Group I, drawn to an immunomer compound comprising at least two oligonucleotides linked together, wherein Applicant has elected the oligonucleotide linkage species to be "iv", a sugar to a non-nucleotide linker and the "G" moiety species to be "2'-deoxy-7-deazaguanosine". However, upon further consideration, the Examiner has withdrawn the "G" species election requirement.

Election of Applicant's invention(s) was made without traverse.

Amendments

Applicant's response and amendments, filed March 17, 2008, to the prior Office Action is acknowledged. Applicant has cancelled Claims 2, 4, 6-9, 17, 19-30, 33-39, 41, 43-94, 96-98 and 100-146, withdrawn Claims 3, 5, 10-16, 18, 32, 40 and 42, amended Claim 95 and 99, and added new claim, Claim 147.

Claims 3, 5, 10-16, 18, 32, 40, 42, 95, 99 and 147 are pending but withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected invention, there being no allowable generic or linking claim.

Claims 1 and 31 are under consideration.

Priority

Applicant's claim for the benefit of a prior-filed parent provisional application 60/440,587 filed on January 16, 2003 under 35 U.S.C. 119(e) is acknowledged.

Accordingly, the effective priority date of the instant application is granted as January 16, 2003.

Information Disclosure Statement

Applicant has filed Information Disclosure Statements on November 5, 2007 and January 11, 2008 that have been considered. The signed and initialed PTO Forms 1449 are mailed with this action.

Examiner's Note

Unless otherwise indicated, previous objections/rejections that have been rendered moot in view of the amendment will not be reiterated. The arguments in the March 17, 2008 response will be addressed to the extent that they apply to current rejection(s).

Specification

1. **The prior objection to the specification** regarding noncompliance with the requirements of 37 C.F.R. 1.821 through 1.825 **is withdrawn** in light of Applicant's amendment to Table 15 of the specification establishing the one-to-one identity of SEQ ID NO:89-99 (Table 15) and CpG DNA #89-99 (Table 16), wherein one skilled in the art can match the number in the Figures and Tables with the sequence identifier properly attached to the disclosed sequence within the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. **The prior rejection of Claims 1 and 31 under 35 U.S.C. 103(a)** as being unpatentable over Kandimalla et al (Bioorganic & Medicinal Chem. 9:807-813, 2001; *of record in IDS), Cook et al (U.S. 2003/0004325 A1), Rappaport (U.S. 5,126,439), Simmonds et al (WO 99/06422, U.S. equivalent 6,444,682), Yu et al (Bioorganic & Medicinal Chem. Letters 10:2585-2588, 2000; *of record in IDS), Teng et al (U.S. 5,677,437), and Cook et al (U.S. 6,232,463 B1) **is withdrawn** in light of Applicant's submission of additional references in the IDS filed November 5, 2007. See below.

3. **Claims 1 and 31 are newly rejected under 35 U.S.C. 103(a)** as being unpatentable over Kandimalla et al (Bioorganic & Medicinal Chem. 9:807-813, 2001; *of record in IDS), Kandimalla et al (WO 02/26757; *of record in IDS) and Simmonds et al (WO 99/06422, U.S. equivalent 6,444,682).

The claims are drawn to an immunomer compound comprising at least two oligonucleotides linked at their sugars to a non-nucleotidic linker, wherein at least one of the oligonucleotides is an oligonucleotide having an accessible 5' end and comprising an immunostimulatory dinucleotide having the structure RpG, wherein the "R" moiety has the structure shown in Figure 24 and the "G" moiety is guanosine, 2'-deoxyguanosine, 2'-deoxy-7-deazaguanosine", 2'-deoxy-6-thioguanosine, arabinoguanosine, 2'-deoxy-2' substituted-arabinoguanosine, 2'O-substituted-arabinoguanosine, or other non-natural purine.

Determining the scope and contents of the prior art.

Kandimalla et al (2001) teach the synthesis of phosphorothioate CpG immunostimulatory oligonucleotides comprising variations of the CpG motif, YpG and CpR, respectively, in which the "Y" moiety represents a monocyclic or bicyclic cytosine analog (pg 808, Figures 1 and 2) and the "R" moiety represents a bicyclic guanine analog, including 2' deoxyguanosine, 2'-deoxy-7-deazaguanosine, and other non-natural purine nucleosides (pg 809, Figure 3).

Kandimalla et al (2001) do not teach the "C" or "Y" moiety to represent a bicyclic cytosine analog in combination with a plurality of possible "G*" groups in the context of two oligonucleotides linked together by one of a plurality of linkages. However, at the time of the invention, Kandimalla et al ('757) disclosed a genus of CpG immunostimulatory oligonucleotides, wherein positional modification of immunostimulatory oligonucleotides dramatically affects their immunostimulatory capabilities. In particular, modifications in the immunostimulatory domain and/or the potentiation domain enhance the immunostimulatory effect in a reproducible and predictable manner (pg 5, lines 7-11). Kandimalla et al disclose immunostimulatory oligonucleotides coupled to each other via a 3'-3' linkage or internucleoside linkages or a functionalized nucleobase or sugar to a non-nucleotidic linkers (pg 10, line 24- pg

11, lines 1-20; pg 14, lines 18-29), wherein the immunostimulatory domain comprises a dinucleotide analog that includes a non-natural pyrimidine nucleoside, a modified nucleoside, deazanucleosides, or any combination thereof (pg 10, lines 22-27), wherein the sugar may be a 2'-deoxyribose (pg 13, line 13), the C*pG* motif comprises a C* that may be a non-natural purine (pg 13, line 22) and a G* that may be 2'-deoxy-7-deazaguanosine, 2'-deoxy-6-thioguanosine, 2'-substituted arabinose sugars, other non-natural purine nucleosides (pg 13, lines 11-15; pg 14, lines 10-17; pg 15, lines 6-10; pg 23, lines 10-11). Kandimalla et al disclose that cytosine has two hydrogen bond acceptor groups at positions 2 (keto-oxygen) and 3 (nitrogen), and a hydrogen bond donor group at the 4-position (amino group). These groups can serve as potential recognizing and interacting groups wit receptors that are responsible for immune stimulation, wherein one embodiment of a cytosine analog is the bicyclic, non-natural purine illustrated in Figure 28, Compound #7, "deoxy-P-base" (pg 12, lines 11-20).

Neither Kandimalla et al (2001) nor Kandimalla et al ('757) teach the C* motif may be the bicyclic cytosine analog 2-oxo-7-deaza-8-methylpurine that possesses the "R" structure shown in Figure 24. However, at the time of the invention, Simmonds et al disclosed novel nucleoside or base analogs having the structure illustrated in Figure 24 of the instant specification (Abstract, pgs 1-2), wherein such novel base analogs may be incorporated into nucleic acids and oligonucleotides (pg 1, lines 5-7; pg 6, lines 1-2).

Ascertaining the differences between the prior art and the claims at issue, and Resolving the level of ordinary skill in the pertinent art.

People of the ordinary skill in the art will be highly educated individuals such as medical doctors, scientists, or engineers possessing advanced degrees, including M.D.'s and Ph.D.'s. Thus, these people most likely will be knowledgeable and well-read in the relevant literature and have the practical experience in functional equivalents and analogs of nucleic acids and chemical synthesis of immunostimulatory oligonucleotides. Therefore, the level of ordinary skill in this art is high.

All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective

functions, and the combination(s) would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Considering objective evidence present in the application indicating obviousness or nonobviousness.

It would have been obvious to try substituting a bicyclic non-natural cytosine analog as taught by Kandimalla et al (2001, '757) with a bicyclic non-natural cytosine analog having the structure shown in Figure 24 (Simmonds et al) with a reasonable expectation of success because the simple substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention, and "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipate success, it is likely that product not of innovation but of ordinary skill and common sense." Kandimalla et al ('757) disclose that a bicyclic cytosine analog may be used together with a guanosine analog, i.e. 2'-deoxy-7-deazaguanosine, to yield an immunostimulatory oligonucleotide.

An artisan would be motivated to try substituting a bicyclic non-natural cytosine analog as taught by Kandimalla et al ('757) with a bicyclic non-natural cytosine analog having the structure shown in Figure 24 as taught by Simmonds et al because both the bicyclic P-base analogue (Kandimalla et al ('757); Figure 28, compound #7) and the bicyclic cytosine analog 2-oxo-7-deaza-8-methylpurine (Simmonds) share the oxygen and nitrogen hydrogen bond acceptor atoms and nitrogen hydrogen bond donor atom on the same face so as to establish hydrogen bonding with another surface in the same manner as cytosine, and Kandimalla et al teach that positional modification of immunostimulatory oligonucleotides dramatically affects their immunostimulatory capabilities in a reproducible and predictable manner (pg 5, lines 7-11), thereby motivating the artisan to improve and optimize the design of an immunostimulatory oligonucleotide having the desired immunostimulatory effect.

Thus, the invention as a whole is *prima facie* obvious.

Applicant's Arguments

Applicant argues that the Examiner has performed improper use of hindsight to identify claimed elements within the prior art without providing the requisite motivation to combine them. That which is within the capabilities of one skilled in the art is not synonymous with obviousness.

Applicant's argument(s) has been fully considered, but is not persuasive. In response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In the instant case, the cited prior art, as a whole, teach the claimed "R" and "G" structures, and Kandimalla et al ('757) provide the motivation to substitute known elements to improve and optimize the design of an immunostimulatory oligonucleotide having the desired immunostimulatory effect.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. **Claims 1 and 31 stand rejected** on the ground of nonstatutory obviousness-type double patenting over Claims 37, 39, 40 and 52-59 of copending Application No. 10/279,684 (now U.S. Patent 7,276,489).

Note: A Notice of Allowance of Claims 37, 39, 40 and 42-60 of 10/279,684 was mailed August 6, 2007.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim immunomers having at least two oligonucleotides linked together by a non-nucleotidic linker, wherein the internucleoside linkage is a phosphorothioate, wherein at least one of the oligonucleotides is an oligonucleotide having an accessible 5' end and comprising an immunostimulatory dinucleotide having the structure RpG, wherein the "R" a non-natural pyrimidine nucleoside and wherein the "G" moiety is guanosine, 2'-deoxyguanosine, 2'-deoxy-7-deazaguanosine", 2'-deoxy-6-thioguanosine, arabinoguanosine, 2'-deoxy-2' substituted-arabinoguanosine, 2'O-substituted-arabinoguanosine, or other non-natural purine. Because the instant claim uses the generic term "internucleoside linkage", the Examiner has looked to the specification for a definition to better understand the invention, wherein a genus of internucleotide linkages are disclosed (pg 7, lines 5-8) substantially as claimed in the co-pending application, and wherein the immunomer may be conjugated to an antigen (pg 7, lines 16-20).

Thus, the composition(s) of the instant claim(s) is reasonably embraced by the copending application.

Applicant's Arguments

Applicant argues that the instantly claimed invention is directed towards an immunomer comprising an "RpG" motif, wherein R is synthetic **purine** motif. Such a modification to the CpG dinucleotide was neither taught nor suggested by 10/279,684 (now U.S. Patent 7,276,489) because the "Y" moiety of the "YpZ" motif is a non-natural pyrimidine.

Applicant's argument(s) has been fully considered, but is not persuasive. The Examiner notes that the "C*" moiety of 10/279,684 (now U.S. Patent 7,276,489) may be a non-natural pyrimidine nucleoside, wherein the "R" non-natural purine shown in Figure 24 and claimed in the instant application is a heterocyclic compound having the structure of a non-natural pyrimidine. Thus, the "non-natural pyrimidine" ('489) is also a "synthetic purine" (instant application). The "G*" moiety "is the same as the instantly elected "G*" moiety of the instant application.

5. **Claim 1 stands provisionally rejected** on the ground of nonstatutory obviousness-type double patenting over Claim 1 of copending Application No. 10/361,111 (U.S. 2004/0156825).
Note: A Notice of Allowance of Claim 1 of 10/361,111 was mailed December 21, 2007.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim immunomers having at least two oligonucleotides linked together by a non-nucleotidic linker, wherein the internucleoside linkage is modified, wherein at least one of the oligonucleotides is an oligonucleotide having an accessible 5' end and comprising an immunostimulatory dinucleotide having the structure of a non-natural pyrimidine nucleoside and a non-natural purine nucleoside. Thus, although the subject matter is recited using different terms, the composition(s) of the instant claim(s) is reasonably embraces and anticipates the composition(s) recited in the copending application.

This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Applicant's Arguments

Applicant argues that 10/361,111 (U.S. 2004/0156825) is a later-filed application, and that Applicants will consider filing a Terminal Disclaimer or take any other action deemed necessary in the later filed, copending applications.

Applicant's argument(s) has been fully considered, but is not persuasive. Applicant has not filed a Terminal Disclaimer or taken any other action deemed necessary in the later filed, copending application as it pertains to the instant application. The Examiner notes that the "Y" moiety of 10/361,111 may be a non-natural pyrimidine nucleoside or 2-oxo-7-deaza-8-methylpurine, which is same as the "R" non-natural purine shown in Figure 24 and claimed in the instant application. Similarly, the "R" moiety "2-amino-6-oxo-7-deazapurine" of 10/361,111 is synonymous with the instantly elected "G" moiety of the instant application described as "7-deazaguanosine". Thus, the "non-natural pyrimidine" is also a "synthetic purine".

6. **Claims 1 and 31 stand provisionally rejected** on the ground of nonstatutory obviousness-type double patenting over Claim 12 of copending Application No. 10/694,383.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim immunostimulatory oligonucleotide compositions comprising an immunostimulatory dinucleotide having the structure of a non-natural pyrimidine nucleoside and a non-natural purine nucleoside.

The claims are drawn to an immunostimulatory oligonucleotide compound comprising a "YpZ" motif, wherein the "Y" moiety is a non-natural pyrimidine and the "Z" moiety is guanosine, 2'-deoxy-guanosine or a non-natural purine nucleoside. Because the claim uses the generic term "compound", the Examiner has looked to the specification for a description of the

invention, wherein the specification discloses that the immunostimulatory oligonucleotides may be joined by 3' to 3' linkages (pg 10, line 23-pg 12, line 9). Thus, instantly claimed immunomer composition(s) are reasonably embraced by immunostimulatory oligonucleotide(s) of the copending application.

This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Applicant's Arguments

Applicant argues that the instantly claimed invention is directed towards an immunomer comprising an "RpG" motif, wherein R is synthetic **purine** motif. Such a modification to the CpG dinucleotide was neither taught nor suggested by 10/694/383 because the "Y" moiety of the "YpZ" motif is a non-natural pyrimidine.

Applicant's argument(s) has been fully considered, but is not persuasive. The Examiner notes that the "Y" moiety of '383 may be a non-natural pyrimidine nucleoside, wherein the "R" non-natural purine shown in Figure 24 and claimed in the instant application is a heterocyclic compound having the structure of a non-natural pyrimidine. Thus, the "non-natural pyrimidine" ('383) is also a "synthetic purine" (instant application). The "Z" moiety is the same as the instantly elected "G*" moiety of the instant application. Similarly, the "Z" moiety "non-natural purine" of '383 reasonably embraces the instantly elected "G" moiety of the instant application described as "7-deazaguanosine" disclosed as a "non-natural purine".

7. **Claims 1 and 31 stand, and Claim 41 is newly provisionally rejected** on the ground of nonstatutory obviousness-type double patenting over Claims 20-21 of copending Application No. 10/694,586.

This is a modified rejection based upon Applicant's amendments to the claims of '586 in the papers filed December 26, 2007.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim immunostimulatory oligonucleotide compositions comprising an immunostimulatory dinucleotide having the structure of a non-natural pyrimidine nucleoside and a non-natural purine nucleoside.

The claims are drawn to an immunostimulatory oligonucleotide compound comprising a "CpG" motif, wherein the "C" moiety is a non-natural pyrimidine and the "G" moiety is a natural or non-natural pyrimidine nucleoside. Because the claim uses the generic term "compound", the Examiner has looked to the specification for a description of the invention, wherein the specification discloses that the immunostimulatory oligonucleotides may be joined

by 3' to 3' linkages (pg 5, lines 18-20). Thus, instantly claimed immunomer composition(s) are reasonably embraced by immunostimulatory oligonucleotide(s) of the copending application.

This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Applicant's Arguments

Applicant argues that the instantly claimed invention is directed towards an immunomer comprising an "RpG" motif, wherein R is synthetic **purine** motif. Such a modification to the CpG dinucleotide was neither taught nor suggested by 10/694,586 because the "Y" moiety of the "YpZ" motif is a non-natural pyrimidine.

Applicant's argument(s) has been fully considered, but is not persuasive. The Examiner notes that the "C*" moiety of '586 may be a non-natural pyrimidine nucleoside, wherein the "R" non-natural purine shown in Figure 24 and claimed in the instant application is a heterocyclic compound having the structure of a non-natural pyrimidine. Thus, the "non-natural pyrimidine" ('383) is also a "synthetic purine" (instant application). Similarly, the "G*" moiety "7-deazaguanosine" of '586 is synonymous with the instantly elected "G*" moiety of the instant application described as "7-deazaguanosine".

8. **Claims 1 and 31 are provisionally rejected** on the ground of nonstatutory obviousness-type double patenting over Claim 18 of copending Application No. 10/865,245.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim immunostimulatory oligonucleotide compositions comprising an immunostimulatory dinucleotide having the structure of a non-natural pyrimidine nucleoside and a non-natural purine nucleoside.

The claims are drawn to an immunostimulatory oligonucleotide compound comprising a "CpG" motif, wherein the "C" moiety is a non-natural pyrimidine and the "G" moiety is a natural or non-natural pyrimidine nucleoside, wherein the immunostimulatory oligonucleotides may be joined by 3' to 3' linkages. Thus, instantly claimed immunomer composition(s) are reasonably embraced by immunostimulatory oligonucleotide(s) of the copending application. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Applicant's Arguments

Applicant argues that Applicants will consider filing a Terminal Disclaimer or take any other action deemed necessary in the later filed, copending application.

Applicant's argument(s) has been fully considered, but is not persuasive. Applicant has not filed a Terminal Disclaimer or taken any other action deemed necessary in the later filed, copending application as it pertains to the instant application. The provisional nonstatutory obviousness-type double patenting rejections will be maintained until all claims have been deemed otherwise in condition for allowance or allowable.

9. **Claims 1 and 31 are provisionally rejected** on the ground of nonstatutory obviousness-type double patenting over Claims 1-5, 16, 21-23 of copending Application No. 10/925,873.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim immunostimulatory oligonucleotide compositions comprising an immunostimulatory dinucleotide having the structure of a non-natural pyrimidine nucleoside and a non-natural purine nucleoside.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim immunomers having at least two oligonucleotides linked together by a non-nucleotidic linker, wherein the internucleoside linkage is a phosphorothioate, wherein at least one of the oligonucleotides is an oligonucleotide having an accessible 5' end and comprising an immunostimulatory dinucleotide having the structure C*pG*, wherein the "C*" a non-natural pyrimidine nucleoside and wherein the "G*" moiety is guanosine, 2'-deoxyguanosine, 2'-deoxy-7-deazaguanosine", 2'-deoxy-6-thioguanosine, arabinoguanosine, 2'-deoxy-2' substituted-arabinoguanosine, 2'O-substituted-arabinoguanosine, or other non-natural purine. Because the instant claim uses the generic term "internucleoside linkage", the Examiner has looked to the specification for a definition to better understand the invention, wherein a genus of internucleotide linkages are disclosed (pg 7, lines 5-8) substantially as claimed in the co-pending application, and wherein the immunomer may be conjugated to an antigen (pg 7, lines 16-20). Thus, the composition(s) of the instant claim(s) is reasonably embraced by the copending application.

This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Applicant's Arguments

Applicant argues that Applicants will consider filing a Terminal Disclaimer or take any other action deemed necessary in the later filed, copending application.

Applicant's argument(s) has been fully considered, but is not persuasive. Applicant has not filed a Terminal Disclaimer or taken any other action deemed necessary in the later filed, copending application as it pertains to the instant application. The provisional nonstatutory obviousness-type double patenting rejections will be maintained until all claims have been deemed otherwise in condition for allowance or allowable.

10. **Claims 1 and 31 are newly provisionally rejected** on the ground of nonstatutory obviousness-type double patenting over Claims 11-13 and 16 of copending Application No. 11/153,054.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim immunostimulatory oligonucleotide compositions comprising an immunostimulatory dinucleotide having the structure of a non-natural pyrimidine nucleoside and a non-natural purine nucleoside.

Because the claims of copending Application No. 11/153,054 recite generically "CpG, C*pG, C*pG* and CpG*", the Examiner has looked to the specification for definitions of the "C" and "G" moieties so as to better understand the invention. The specification discloses that C* is… 1-(2'-deoxy-β-D-ribofuranosyl)-2-oxo-7-deaza-8-methyl-purine, and that G* is… 2'-deoxy-7-deazaguanosine (pg 1, [0010]), wherein the non-nucleotidic linker may be a 3'-3' linkage (pg 3, [0032]). Thus, instantly claimed immunomer composition(s) anticipate immunostimulatory oligonucleotide(s) of the copending application.

This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Applicant's Arguments

Applicant argues that Applicants will consider filing a Terminal Disclaimer or take any other action deemed necessary in the later filed, copending application.

Applicant's argument(s) has been fully considered, but is not persuasive. Applicant has not filed a Terminal Disclaimer or taken any other action deemed necessary in the later filed, copending application as it pertains to the instant application. The provisional nonstatutory obviousness-type double patenting rejections will be maintained until all claims have been deemed otherwise in condition for allowance or allowable.

11. **Claims 1 and 31 stand provisionally rejected** on the ground of nonstatutory obviousness-type double patenting over Claims 1 and 4 of copending Application No. 11/174,002 (U.S. 2006/0211641).

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim immunostimulatory oligonucleotide compositions comprising an immunostimulatory dinucleotide having the structure of a non-natural pyrimidine nucleoside and a natural or non-natural purine nucleoside.

Thus, instantly claimed immunomer composition(s) anticipate immunostimulatory oligonucleotide(s) of the copending application.

This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Applicant's Arguments

Applicant argues that Applicants will consider filing a Terminal Disclaimer or take any other action deemed necessary in the later filed, copending application.

Applicant's argument(s) has been fully considered, but is not persuasive. Applicant has not filed a Terminal Disclaimer or taken any other action deemed necessary in the later filed, copending application as it pertains to the instant application. The provisional nonstatutory obviousness-type double patenting rejections will be maintained until all claims have been deemed otherwise in condition for allowance or allowable.

Conclusion

12. No claims are allowed.

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on November 5, 2007 prompted the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Kevin K. Hill, Ph.D. whose telephone number is 571-272-8036. The Examiner can normally be reached on Monday through Friday, between 9:00am-6:00pm EST.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Joseph T. Woitach can be reached on 571-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin K. Hill, Ph.D./
Examiner, Art Unit 1633

/Q. JANICE LI, M.D./
Primary Examiner, Art Unit 1633